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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/680,847	10/05/2000	Burton A Hipp	A-69622/DCA/JWC	2168
7590	06/04/2004		EXAMINER	
			MOSLEHI, FARHOOD	
			ART UNIT	PAPER NUMBER
			2154	
DATE MAILED: 06/04/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/680,847	HIPP, BURTON A
	Examiner Farhood Mosleh	Art Unit 2154

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 22 March 2004.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-29 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-29 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____ .

## DETAILED ACTION

1. Claims 1-29 are presented for examination.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,5, 7-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Belsan et al. (5403639) (hereinafter Belsan).
3. As per claim 1, Belsan shows in a computer system, a method savings a running software application for execution at a later time, the application being associated with a process having a state and an environment, comprising the steps of:

Associating a unique identifier with the running software application to be saved (e.g. col. 34, lines 55-60);

virtualizing the process environment associated with said running software application (e.g. col. 8, lines 20-30 and col. 15, lines 35-40);

recording process events that change the state of the process (e.g. col. 7, lines 42-48);

saving process state in the form of a snapshot image (e.g. col. 2, lines 24-34); and saving shared resources state relevant to said snapshot image with said snapshot image (e.g. col. 3, lines 11-19).

7. As per claim 5, it is rejected for similar reasons as stated above.

4. As per claim 8, it is rejected for similar reasons as stated above.
5. As per claim 9, it is rejected for similar reasons as stated above.
6. As per claim 10, it is rejected for similar reasons as stated above.
7. As per claim 15, it is rejected for similar reasons as stated above.
8. As per claim 16, it is rejected for similar reasons as stated above.
9. As per claim 17, it is rejected for similar reasons as stated above.
10. As per claim 22, it is rejected for similar reasons as stated above.
11. As per claim 23, it is rejected for similar reasons as stated above.
12. As per claim 24, it is rejected for similar reasons as stated above.
13. As per claim 29, it is rejected for similar reasons as stated above.
14. As per claim 7, Belsan shows a method comprising:

Recording process events that change one or more states of one or more processes associated with a running software application (e.g. col. 6, lines 45-50); saving one or more snapshot images, the one or more snapshot images comprising said one or more process states of said one or more (e.g. col. 2, lines 1-10); and saving shared resources state used by the application with said snapshot images (e.g. col. 2, lines 10-15).

15. As per claim 14, it is rejected for similar reasons as stated above.
16. As per claim 21, it is rejected for similar reasons as stated above.
17. As per claim 11, Belsan teaches the method further comprising suspending said one or more processes (e.g. col. 3, lines 10-15).
18. As per claim 18, it is rejected for similar reasons as stated above.
19. As per claim 25, it is rejected for similar reasons as stated above.

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20. As per claim 12, Belsan teaches the method further comprising restoring said software application, wherein said restoring comprises:

Restoring said shared resource state (e.g. col. 35, lines 55-65); and

Restoring each of the one or more process associated with said one or more snapshot images (e.g. col. 35, lines 55-65).

21. As per claim 19, it is rejected for similar reasons as stated above.

22. As per claim 26, it is rejected for similar reasons as stated above.

23. As per claim 28, it is rejected for similar reasons as stated above.

24. As per claim 13, Belsan teaches the method wherein said saving said one or more process states and said saving shared resource state occurs on a first computer system, and wherein said restoring said software application occurs on a second computer system (e.g. col. 35, lines 55-65).

25. As per claim 20, it is rejected for similar reasons as stated above.

26. As per claim 27, it is rejected for similar reasons as stated above.

27. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

28. Claims 4 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Sun et al. (6,442,663) (hereinafter Sun).
29. As per claim 4, Sun shows a method of restoring to a running state a software application stored in a running state with necessary processes, process state information, memory information, and dependency information, comprising the steps of:
  - matching said stored software application with an application identifier (e.g. col.1, lines 57-68);
  - locating all stored processes stored with said software application (e.g. col. 2, lines 32-38);
  - recreating global/shared state (e.g. col. 2, lines 40-45);
  - creating a process that inherits the global/shared state (e.g. col. 2, lines 60-67);
  - isolating the global/shared state process from other processes (e.g. col. 3, lines 1-7);
  - for each type of state stored within the stored software application, bind system state to a virtual definition if the state is virtualized, reconnect the state to any processes the state is shared with, and place the state in a synchronized wait (e.g. col. 2, lines 52-58);
  - removing traces and states included (e.g. col. 4, lines 35-39);
  - performing a synchronized resume of all processes (e.g. col. 7, lines 24-31).
30. As per claim 6, it is rejected for similar reasons as stated above.

***Claim Rejections - 35 USC § 103***

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belsan in view of Sun.

As per claim 2, Belsan does not teach the step of saving modified memory pages relevant to said snapshot image with said snapshot image. Sun teaches the step of saving modified memory pages relevant to said snapshot image with said snapshot image (e.g. Abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Belsan with Sun because it would provide the means to save modified memory pages, in order to save the pages relevant to the snapshot image.

33. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belsan in view of Biegel et al. (5,608,720) (hereinafter Biegel).

34. As per claim 3, Belsan does not teach the step of saving states associated with multiple threads relevant to said snapshot image. Biegel teaches the use of states associated with multiple threads (e.g. col. 40, lines 6-19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Belsan

with Biegel, because it would provide associated multiple threading functionality in order to save associated multiple thread states relevant to the snapshot image.

35. Applicant's arguments files 3/22/2004 have been fully considered but are not persuasive.

36. In the remarks, applicants argued in substance that (1) Belsan, Sun or Biegel, either separately or in combination do not teach or suggest a method wherein "recording process events that change the state of the process".

37. As to point (1) the examiner disagrees because creation of instances of a snapshot application data group requires recording the process events that change the state of the process (e.g. col. 35, lines 10-20).

38. In the remarks, applicants argued in substance that (2) Belsan, Sun or Biegel, either separately or in combination do not teach or suggests a method wherein "for each type of state stored within the stored software application, bind system state to a virtual definition if the state is virtualized, reconnect the state to any process the state is shared with, and place the state in synchronized wait".

39. As to point (2) the examiner disagrees because Sun discusses collecting memory contents of a process on one computer into a machine independent information stream, and for restoring the data content from the information stream to the memory space of a new process on a different computer. This action will put the process in synchronized wait state (e.g. col. 7, lines 33-45).

40. Applicant's newly claims 7-29 have been addressed above.

***Conclusion***

41. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farhood Moslehi whose telephone number is 703-305-8646. The examiner can normally be reached on M-F 8:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 703-305-8498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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